

Kendall Hunt Background information for Illustrative Mathematics

Kendall Hunt Publishing has been in business for over 75 years and is the premiere publisher of innovative, hands-on, inquiry-based science, mathematics and gifted curricula for grades K-12. Our award-winning research and standards-based programs are available in both print and digital components that fully engage students, teachers and parents. In January of 2019, Kendall Hunt partnered with Illustrative Mathematics. With this collaboration, we are the only provider of the free, IM Certified™ math curriculum for students in grades K-12.

Driven by student discourse, the Kendall Hunt's IM K–5 Math program is a rich, engaging core program built around focus, coherence, and rigor. The curriculum is a trusted, expert-authored program developed to equip all students to thrive in mathematics. It is a problem-based core curriculum rooted in content and practice standards to foster learning and achievement for all. Every lesson in this program are designed with a focus on independent, group, and whole-class instruction. This format builds mathematical understanding and fluency for all students. Teachers will also use Warm-ups, Cool-downs and Centers to help guide lesson pacing and planning.

Students learn by doing math, solving problems in mathematical and real-world contexts, and constructing arguments using precise language. Teachers can shift their instruction and facilitate student learning with high-leverage routines that guide them in understanding and making connections between concepts and procedures. In a mathematics class, students should not just learn *about* mathematics, they should *do* mathematics. This can be defined as engaging in the mathematical practices: making sense of problems, reasoning abstractly and quantitatively, making arguments and critiquing the reasoning of others, modeling with mathematics, making appropriate use of tools, attending to precision in their use of language, looking for and making use of structure, and expressing regularity in repeated reasoning. This problem-based curriculum makes rigorous mathematics accessible to all learners. The key to all students achieving mathematical proficiency is the balance of the three components of rigor:

Conceptual understanding: Students need to understand the why behind the how in mathematics. Concepts build on experience with concrete contexts. Students should access these concepts from a number of perspectives in order to see math as more than a set of disconnected procedures.

Procedural fluency: We view procedural fluency as solving problems expected by the standards with speed, accuracy, and flexibility.

Application: Application means applying mathematical or statistical concepts and skills to a novel mathematical or real-world context.

Illustrative Mathematics believes that these three aspects of mathematical proficiency are interconnected: procedural fluency is supported by understanding, and deep understanding

often requires procedural fluency. In order to be successful in applying mathematics, students must both understand and be able to do the mathematics.

About These Materials

These materials were created by Illustrative Mathematics. They were piloted and revised in the 2019-2020 and 2020-2021 school years.

Each grade level contains 8 or 9 units. Units contain between 8 and 28 lesson plans. Each unit, depending on the grade level, has pre-unit practice problems in the first section, checkpoints or checklists after each section, and an end-of-unit assessment. In addition to lessons and assessments, units have aligned center activities to support the unit content and ongoing procedural fluency.

The time estimates in these materials refer to instructional time. Each lesson plan is designed to fit within a class period that is at least 60 minutes long. Some units contain optional lessons and some lessons contain optional activities that provide additional student practice for teachers to use at their discretion.

Teachers can access the teacher materials either in print or in a browser as a digital PDF. When possible, lesson materials should be projected so all students can see them.

Design Principles

This is a problem-based curriculum that fosters the development of mathematics learning communities in classrooms, gives students access to the mathematics through a coherent progression, and provides teachers the opportunity to deepen their knowledge of mathematics, student thinking, and their own teaching practice.

IM believes that all students, each with unique knowledge and needs, enter the mathematics learning community as capable learners of meaningful mathematics. Mathematics instruction that supports students in viewing themselves as capable and competent must leverage and build upon the funds of knowledge they bring to the classroom. In order to do this, instruction must be grounded in equitable structures and practices that provide all students with access to grade-level content and provide teachers with necessary guidance to listen to, learn from, and support each student. The curriculum materials include classroom structures that support students in taking risks, engaging in mathematical discourse, productively struggling through problems, and participating in ways that make their ideas visible. It is through these classroom structures that teachers will have daily opportunities to learn about and leverage their students' understandings and experiences and how to position each student as a capable learner of mathematics.

Students learn mathematics by doing mathematics, rather than by watching someone else do mathematics or being told what needs to be done. Doing mathematics can be defined as learning mathematical concepts and procedures while engaging in the mathematical practices—making sense of problems, reasoning abstractly and quantitatively, making arguments and critiquing the reasoning of others, modeling with mathematics, making appropriate use of tools, attending to precision in their use of language, looking for and making use of structure, and expressing regularity in repeated reasoning. By engaging in the mathematical practices with their peers, students have the opportunity to see themselves as mathematical thinkers with worthwhile ideas and perspectives.

To support students in making connections to prior understandings and upcoming grade-level work, it is important for teachers to understand the progressions in the materials. Grade-level, unit, lesson, and activity narratives describe decisions about the organization of mathematical ideas, connections to prior and upcoming grade-level work, and the purpose of each lesson and activity. When appropriate, the narratives explain whether a decision about the scope and sequence is required by the standards or a choice made by the authors. The basic architecture of the materials supports all learners through a coherent progression of the mathematics based both on the standards and on research-based learning trajectories. Each activity and lesson is part of a mathematical story that spans units and grade levels. This coherence allows students to view mathematics as a connected set of ideas that makes sense.

You can learn more and access Kendall Hunt's IM K–5 Math content at <https://im.kendallhunt.com/>

Kendall Hunt also offers print materials, manipulative kits, an optional interactive digital platform and IM Certified™ professional learning. To purchase or learn more about Kendall Hunt's IM K–5 Math visit <https://k12.kendallhunt.com/program/illustrative-mathematics-elementary-school>

To learn more about Kendall Hunt visit <https://k12.kendallhunt.com/>

To request more information, email us at K12info@kendallhunt.com